User Manual

Read and understand this manual before using machine.

17” DRILL PRESS

Model Number 20520

C US

STEEL CITY TOOL WORKS

VER. 2.07

Manual Part No. OR71528

THANK YOU for purchasing your new Steel City Drill Press. This drill press has been designed, tested, and inspected with you, the customer, in mind. When properly assembled, used, and maintained, your drill press will provide you with years of trouble free service, which is why it is backed by one of the longest machinery warranties in the business.

This drill press is just one of many products in the Steel City's family of woodworking machinery and is proof of our commitment to total customer satisfaction.

At Steel City we continue to strive for excellence each and every day and value the opinion of you, our customer. For comments about your drill press or Steel City Tool Works, please visit our web site at **www.steelcitytoolworks.com** .

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INTRODUCTION

This user manual is intended for use by anyone working with this machine. It should be kept available for immediate reference so that all operations can be performed with maximum efficiency and safety. Do not attempt to perform maintenance or operate this machine until you have read and understand the information contained in this manual.

The drawings, illustrations, photographs, and specifications in this user manual represent your machine at time of print. However, changes may be made to your machine or this manual at any time with no obligation to Steel City Tool Works.

WARRANTY

2 YEAR LIMITED WARRANTY

Steel City Tool Works, LLC (SCTW) warrants this SCTW machinery to be free of defects in workmanship and materials for a period of 2 years from the date of the original retail purchase by the original owner for domestic use. Granite components are warranted for 2 years based on normal use and is void if non SCTW accessories are used that cause the break or chip. Customer must advise SCTW within 30 days for any damage or defect found upon receipt of the product to qualify for the warranty on granite.

The warranty does not cover any product used for professional or commercial production purpose nor for industrial or educational applications. Such cases are covered by our 1 year Limited Warranty with the Conditions and Exceptions listed below.

Conditions and exception:

Warranty applies to the original buyer only and may not be transferred. Original proof of purchase is required.

Warranty does not include failures, breakage or defects deemed after inspection by an Authorized Service Center, (ASC) or agent of, have been directly or indirectly caused by or resulting from improper use, lack of or improper maintenance, misuse or abuse, negligence, accidents, damage in handling or transport, or normal wear and tear of any part or component.

Additionally, warranty is void if repairs or alterations are made to the machine by an unauthorized service center without the direct consent of SCTW

Consumables such as blades, knives, bits and sandpaper are not covered.
Wear items such as drive belt, bearings, switch, are covered for 1 year.

To file a claim of warranty or to find a service center, call toll free 877-724-8665 or email customercare@steelcitytoolworks.net and you must be able to present the original or photo copy of the sales receipt including the serial number from the machine and/or carton.

SCTW will inspect, repair or replace, at its expense and its option, any part that has proven to be defective in workmanship or material, provided that the customer returns the product prepaid to a designated ASC and provides SCTW with a reasonable opportunity to verify the alleged defect by inspection. SCTW will return the product or replacement at our expense unless it is determined by us that there is no defect or that the defect resulted from causes not within the scope of our *warranty in which case we will, at your direction, dispose of or return the product.* In the event you choose to have the product returned, you will be responsible for the handling and shipping costs of the return.

SCTW furnishes the above warranties in lieu of all other warranties, express or implied. SCTW shall not be liable for any special, indirect, incidental, punitive or consequential damages, including without limitation loss of profits arising from or related to the warranty, the breach of any agreement or warranty, or the operation or use of its machinery, including without limitation damages arising from damage to fixtures, tools, equipment, parts or materials, direct or indirect loss caused by and other part, loss of revenue or profits, financing or interest charges, and claims by and third person, whether or not notice of such possible damages has been given to SCTW. Damages or any kind for any delay by or failure of SCTW to perform its obligations under this agreement or claims made a subject of a legal proceeding against SCTW more than one (1) year after such cause of action first arose.

The validity, construction and performance of this Warranty and any sale of machinery by SCTW shall be governed by the law of the Commonwealth of Pennsylvania, without regard to conflicts of law's provisions of any jurisdiction. Any action related in any way to any alleged or actual offer, acceptance or sale by SCTW or any claim related to the performance of and agreement including without limitation this Warranty, shall take place in the federal or state courts in Allegheny County, Pennsylvania.

Warranty registration card must be submitted to SCTW for purpose of proof within 90 days of purchase with a copy of the sales receipt. Failure to do so will, revert the 2 year warranty to 1 year as in the terms stated above. This registration is also needed to facilitate contact in case of a safety recall.

This warranty gives you specific legal rights and you may have other rights which vary in certain States or Provinces.

Note to user
This instruction manual is meant to serve as a guide only. Specification and references are subject to change without prior notice. Check the website www.steelcitytoolworks.com for updated manuals with reference to the VER# located on the front page.

LIMITED WARRANTY – ACCU-SHOP line of bench top tools

Steel City Tool Works, LLC (SCTW) warrants this SCTW ACCU-SHOP machinery to be free of defects in workmanship and materials for a period of 2 years from the date of the original retail purchase by the original owner for domestic use.
Consumables such as blades, knives, bits and sandpaper are not covered.
Wear items such as drive belt, bearings, switch, are covered for 1 year.

The warranty does not cover any product used for professional or commercial production purpose nor for industrial or educational applications. Such cases are covered by our 30 days Limited Warranty with the Conditions and Exceptions listed previously.

WARRANTY CARD

Name _____
Street _____
Apt. No. _____
City _____ State _____ Zip _____
Phone Number _____
E-Mail _____

Product Description: _____
Model No.: _____
Serial No. _____

The following information is given on a voluntary basis and is strictly confidential.

1. Where did you purchase your STEEL CITY machine?
   Store: _____
   City: _____

2. How did you first learn of Steel City Tool Works?
   ___ Advertisement ___ Mail Order Catalog
   ___ Web Site ___ Friend
   ___ Local Store Other_____

3. Which of the following magazines do you subscribe to?
   ___ American Woodworker ___ American How-To
   ___ Cabinetmaker ___ Family Handyman
   ___ Fine Homebuilding ___ Fine Woodworking
   ___ Journal of Light Construction ___ Old House Journal
   ___ Popular Mechanics ___ Popular Science
   ___ Popular Woodworking ___ Today's Homeowner
   ___ WOOD ___ Woodcraft
   ___ WOODEN Boat ___ Woodshop News
   ___ Woodsmith ___ Woodwork
   ___ Woodworker ___ Woodworker's Journal
   ___ Workbench Other_____

4. Which of the following woodworking / remodeling shows do you watch?
   ___ Backyard America ___ The American Woodworker
   ___ Home Time ___ The New Yankee Workshop
   ___ This Old House ___ Woodwright's Shop
   Other_____

5. What is your annual household income?
   ___ $20,000 to $29,999 ___ $30,000 to $39,999
   ___ $40,000 to $49,999 ___ $50,000 to $59,999
   ___ $60,000 to $69,999 ___ 70,000 to $79,999
   ___ $80,000 to $89,999 ___ $90,000 +

6. What is your age group?
   ___ 20 to 29 years ___ 30 to 39 years
   ___ 40 to 49 years ___ 50 to 59 years
   ___ 60 to 69 years ___ 70 + years

7. How long have you been a woodworker?
   ___ 0 to 2 years ___ 2 to 8 years
   ___ 8 to 20 years ___ over 20 years

8. How would you rank your woodworking skills?
   ___ Simple ___ Intermediate
   ___ Advance ___ Master Craftsman

9. How many Steel City machines do you own? _____

10. What stationary woodworking tools do you own?
    Check all that apply.
    ___ Air Compressor ___ Band Saw
    ___ Drill Press ___ Drum Sander
    ___ Dust Collection ___ Horizontal Boring Machine
    ___ Jointer ___ Lathe
    ___ Mortiser ___ Panel Saw
    ___ Planer ___ Power Feeder
    ___ Radial Arm Saw ___ Shaper
    ___ Spindle Sander ___ Table Saw
    ___ Vacuum Veneer Press ___ Wide Belt Sander
    Other_____

11. Which benchtop tools do you own? *Check all that apply.*
    ___ Belt Sander ___ Belt / Disc Sander
    ___ Drill Press ___ Band Saw
    ___ Grinder ___ Mini Jointer
    ___ Mini Lathe ___ Scroll Saw
    ___ Spindle / Belt Sander Other_____

12. Which portable / hand held power tools do you own?
    Check all that apply.
    ___ Belt Sander ___ Biscuit Jointer
    ___ Dust Collector ___ Circular Saw
    ___ Detail Sander ___ Drill / Driver
    ___ Miter Saw ___ Orbital Sander
    ___ Palm Sander ___ Portable Thickness Planer
    ___ Saber Saw ___ Reciprocating Saw
    ___ Router Other_____

13. What machines / accessories would you like to see added to the STEEL CITY line?
    _____
    _____

14. What new accessories would you like to see added?
    _____
    _____

15. Do you think your purchase represents good value?
    ___Yes ___ No

16. Would you recommend STEEL CITY products to a friend?
    ___ Yes ___ No

17. Comments:
    _____
    _____
    _____
    _____
    _____

CUT HERE

FOLD ON DOTTED LINE

PLACE
STAMP
HERE

SteelCityToolWorks

#4 Northpoint Court
Bolingbrook, IL 60440

FOLD ON DOTTED LINE

PRODUCT SPECIFICATIONS

MOTOR

Type	Induction
Continuous duty HP	3/4
Amps	10/5
Volts	120/240
Phase	Single
Hertz	60
RPM	1725 (no load)

PRODUCT SPECIFICATIONS

Belt type	Poly-V
Pulley type	Step
Belt Tensioning	Motor slide
Number of speeds	16
Drill speeds	215, 310, 340, 450, 490, 510, 600, 675, 735, 750, 1200, 1380, 1500, 1850, 2035, 2720
Spindle taper	#2 Morse taper
Chuck taper	JT3
Chuck type	Keyed
Chuck capacity	5/8”
Chuck to table dimension maximum	24”
Chuck to base dimension	43-3/4”
Quill diameter	2”
Quill travel	6”
Quill lock	Yes

PRODUCT SPECIFICATIONS (cont)

Handle Operation	360 degree rotation
Motor control	Industrial push button with OFF paddle
Table size	14” wide x 14” deep
Table tilt	45° left and right
Table movement	Rack and pinion
Table material	Cast iron
Depth stop	Yes
Depth stop type	External Micro-Adjust with Quick Set
Depth scale	Yes
Column diameter	3-1/8” (80mm)

PRODUCT DIMENSIONS

Height	69”
Width	14”
Depth	27”
Weight	227 lbs.

SHIPPING DIMENSIONS

Carton type	Box
Length	58”
Width	26-1/4”
Height	11-1/2”
Gross weight	251 lbs.

ACCESSORIES AND ATTACHMENTS

There are a variety of accessories available for your Steel City Product. For more information on any accessories associated with this and other machines, please contact your nearest Steel City distributor, or visit our website at: **www.steelcitytoolworks.com**.

DEFINITION OF TERMS

Belt cover - Can be opened to provide access to belts, pulleys, and speed chart.

On/Off switch - Access power to drill press or turn power off.

Feed handles - Used to lower chuck and apply pressure toward work piece.

Quill lock - Holds quill in predetermined position.

Keyed chuck - Key is used to loosen or tighten drilling and sanding tools.

Table - Holds work piece.

Column - Used to support work table and drill press head.

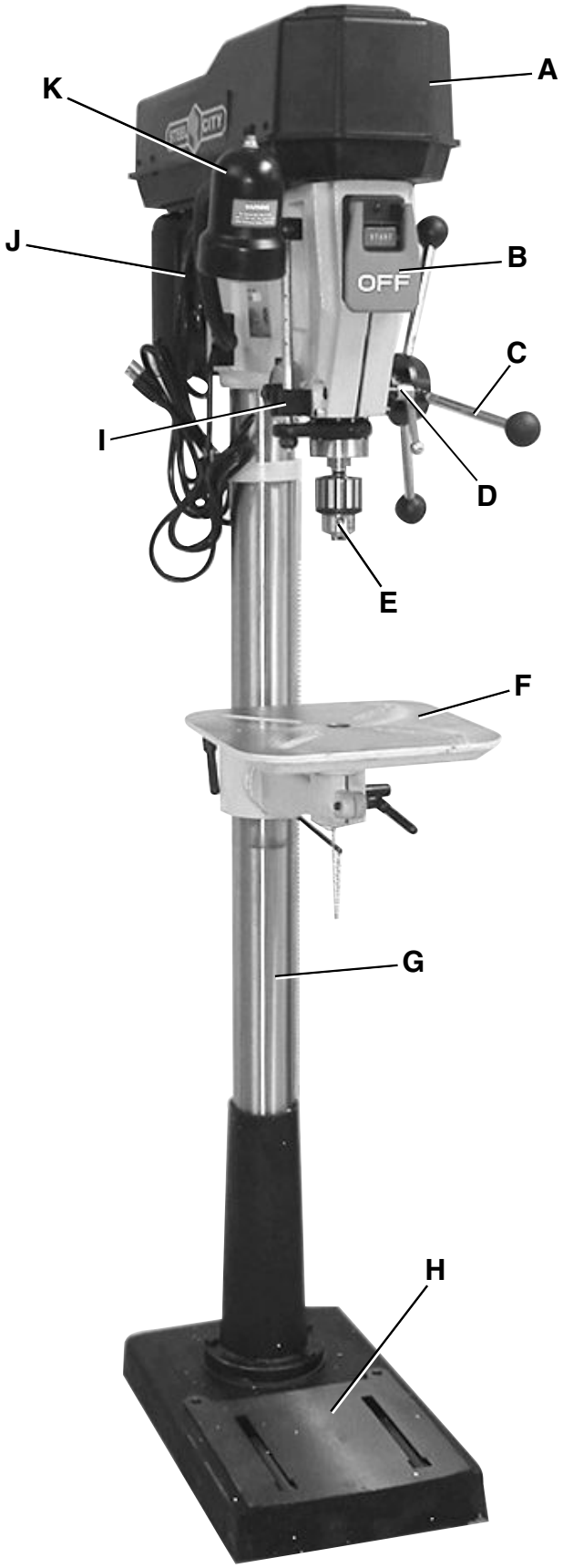
Base - Sits on floor, adds stability, and attaches to column.

Depth scale - Keeps track of tool travel into work piece.

Motor - Supplies power to drill press.

Flexible lamp - Provides light source for all operations.

FEATURE IDENTIFICATION



A. Belt cover
B. On/Off switch
C. Feed handles
D. Quill lock
E. Keyed chuck
F. Table
G. Column
H. Base
I. Depth scale
J. Motor
K. Flexible lamp

GENERAL SAFETY

⚠ WARNING

TO AVOID serious injury and damage to the machine, read and follow all Safety and Operating Instructions before assembling and operating this machine.

This manual is not totally comprehensive. It does not and can not convey every possible safety and operational problem which may arise while using this machine. The manual will cover many of the basic and specific safety procedures needed in an industrial environment.

All federal and state laws and any regulations having jurisdiction covering the safety requirements for use of this machine take precedence over the statements in this manual. Users of this machine must adhere to all such regulations.

Below is a list of symbols that are used to attract your attention to possible dangerous conditions.

⚠

This is the international safety alert symbol. It is used to alert you to potential personal injury hazards. Obey all safety messages that follow this symbol to avoid possible injury or death.

⚠ DANGER

Indicates an imminently hazardous situation which, if not avoided, **WILL** result in death or serious injury.

⚠ WARNING

Indicates a potentially hazardous situation which, if not avoided, **COULD** result in death or serious injury.

⚠ CAUTION

Indicates a potentially hazardous situation, if not avoided, **MAY** result in minor or moderate injury. It may also be used to alert against unsafe practices.

CAUTION

CAUTION used without the safety alert symbol indicates a potentially hazardous situation which, if not avoided, may result in property damage.

NOTICE

This symbol is used to alert the user to useful information about proper operation of the machine.

⚠ WARNING

Exposure to the dust created by power sanding, sawing, grinding, drilling and other construction activities may cause serious and permanent respiratory or other injury, including silicosis (a serious lung disease), cancer, and death. Avoid breathing the dust, and avoid prolonged contact with dust. The dust may contain chemicals known to the State of California to cause cancer, birth defects or other reproductive harm.

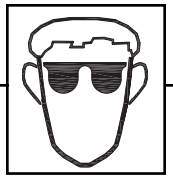
Some examples of these chemicals are:

- Lead from lead-based paints.
- Crystalline silica from bricks, cement and other masonry products.
- Arsenic and chromium from chemically-treated lumber.

Always operate tool in well ventilated area and provide for proper dust removal. Use a dust collection system along with an air filtration system whenever possible. Always use properly fitting NIOSH/OSHA approved respiratory protection appropriate for the dust exposure, and wash exposed areas with soap and water.

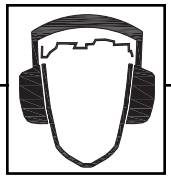
1. To avoid serious injury and damage to the machine, read the entire User Manual before assembly and operation of this machine.

⚠ WARNING



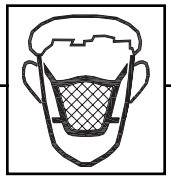
2. **ALWAYS** wear eye protection. Any machine can throw debris into the eyes during operations, which could cause severe and permanent eye damage. Everyday eyeglasses are **NOT** safety glasses. **ALWAYS** wear Safety Goggles (that comply with ANSI standard Z87.1) when operating power tools.

⚠ WARNING



3. **ALWAYS** wear hearing protection. Plain cotton is not an acceptable protective device. Hearing equipment should comply with ANSI S3.19 Standards.

⚠ WARNING



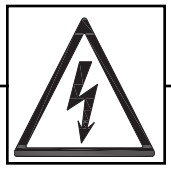
4. **ALWAYS** wear a NIOSH/OSHA approved dust mask to prevent inhaling dangerous dust or airborne particles.

5. **ALWAYS** keep the work area clean, well lit, and organized. **DO NOT** work in an area that has slippery floor surfaces from debris, grease, and wax.

6. **ALWAYS** unplug the machine from the electrical receptacle before making adjustments, changing parts or performing any maintenance.

7. **AVOID ACCIDENTAL STARTING**. Make sure that the power switch is in the "OFF" position before plugging in the power cord to the electrical receptacle.

⚠ WARNING



8. **AVOID** a dangerous working environment. **DO NOT** use electrical tools in a damp environment or expose them to rain or moisture.

⚠ WARNING

9. **CHILDPROOF THE WORKSHOP AREA** by removing switch keys, unplugging tools from the electrical receptacles, and using padlocks.

10. **DO NOT** use electrical tools in the presence of flammable liquids or gasses.

11. **DO NOT FORCE** the machine to perform an operation for which it was not designed. It will do a safer and higher quality job by only performing operations for which the machine was intended.

12. **DO NOT** stand on a machine. Serious injury could result if it tips over or you accidentally contact any moving part.

13. **DO NOT** store anything above or near the machine.

14. **DO NOT** operate any machine or tool if under the influence of drugs, alcohol, or medication.

15. **EACH AND EVERY** time, check for damaged parts prior to using any machine. Carefully check all guards to see that they operate properly, are not damaged, and perform their intended functions. Check for alignment, binding or breakage of all moving parts. Any guard or other part that is damaged should be immediately repaired or replaced.

16. Ground all machines. If any machine is supplied with a 3-prong plug, it must be plugged into a 3-contact electrical receptacle. The third prong is used to ground the tool and provide protection against accidental electric shock. **DO NOT** remove the third prong.

17. Keep visitors and children away from any machine. **DO NOT** permit people to be in the immediate work area, especially when the machine is operating.

18. **KEEP** protective guards in place and in working order.

19. **MAINTAIN** your balance. **DO NOT** extend yourself over the tool. Wear oil resistant rubber soled shoes. Keep floor clear of debris, grease, and wax.

20. **MAINTAIN** all machines with care. **ALWAYS KEEP** machine clean and in good working order. **KEEP** all blades and tool bits sharp.

21. **NEVER** leave a machine running, unattended. Turn the power switch to the OFF position. **DO NOT** leave the machine until it has come to a complete stop.

22. **REMOVE ALL MAINTENANCE TOOLS** from the immediate area prior to turning the machine ON.

23. **SECURE** all work. When it is possible, use clamps or jigs to secure the workpiece. This is safer than attempting to hold the workpiece with your hands.

24. **STAY ALERT**, watch what you are doing, and use common sense when operating any machine. **DO NOT** operate any machine tool while tired or under the influence of drugs, alcohol, or medication. A moment of inattention while operating power tools may result in serious personal injury.

25. **USE ONLY** recommended accessories. Use of incorrect or improper accessories could cause serious injury to the operator and cause damage to the machine. If in doubt, **DO NOT** use it.
26. **THE USE** of extension cords is not recommended for 230V equipment. It is better to arrange the placement of your equipment and the installed wiring to eliminate the need for an extension cord. If an extension cord is necessary, refer to the chart in the Grounding Instructions section to determine the minimum gauge for the extension cord. The extension cord must also contain a ground wire and plug pin.
27. Wear proper clothing, **DO NOT** wear loose clothing, gloves, neckties, or jewelry. These items can get caught in the machine during operations and pull the operator into the moving parts. Users must wear a protective cover on their hair, if the hair is long, to prevent it from contacting any moving parts.
28. **SAVE** these instructions and refer to them frequently and use them to instruct other users.
29. Information regarding the safe and proper operation of this tool is also available from the following sources:

    Power Tool Institute
    1300 Summer Avenue
    Cleveland, OH 44115-2851
    www.powertoolinstitute.org

    National Safety Council
    1121 Spring Lake Drive
    Itasca, IL 60143-3201

    American National Standards Institute
    25West 43rd. St, 4th Floor
    New York, NY. 10036
    ANSI 01.1 Safety Requirements
    For Woodworking Machines
    WWW.ANSI.ORG

    U.S. Department of Labor Regulations
    OSHA 1910.213 Regulations
    WWW.OSHA.GOV

PRODUCT SAFETY

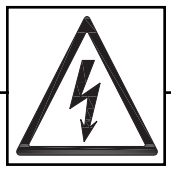
1. Serious personal injury may occur if normal safety precautions are overlooked or ignored. Accidents are frequently caused by lack of familiarity or failure to pay attention. Obtain advice from supervisor, instructor, or another qualified individual who is familiar with this machine and its operations.
2. Every work area is different. Always consider safety first, as it applies to your work area. Use this machine with respect and caution. Failure to do so could result in serious personal injury and damage to the machine.
3. Prevent electrical shock. Follow all electrical and safety codes, including the National Electrical Code (NEC) and the Occupational Safety and Health Regulations (OSHA). All electrical connections and wiring should be made by qualified personnel only.

⚠ WARNING

4. **TO REDUCE** the risk of electrical shock. **DO NOT** use this machine outdoors. **DO NOT** expose to rain or moisture. Store indoors in a dry area.

5. **STOP** using this machine, if at any time you experience difficulties in performing any operation. Contact your supervisor, instructor or machine service center immediately.
6. Safety decals are on this machine to warn and direct you to how to protect yourself or visitors from personal injury. These decals **MUST** be maintained so that they are legible. **REPLACE** decals that are not legible.
7. **DO NOT** leave the unit plugged into the electrical outlet. Unplug the unit from the outlet when not in use and before servicing, performing maintenance tasks, or cleaning.
8. **ALWAYS** turn the power switch “OFF” before unplugging the drill press.

⚠ WARNING



9. **DO NOT** handle the plug or drill press with wet hands.

10. **USE** accessories only recommended by Steel City.
11. **DO NOT** pull the drill press by the power cord. **NEVER** allow the power cord to come in contact with sharp edges, hot surfaces, oil or grease.
12. **DO NOT** unplug the drill press by pulling on the power cord. **ALWAYS** grasp the plug, not the cord.
13. **REPLACE** a damaged cord immediately. **DO NOT** use a damaged cord or plug. **DO NOT USE** if the drill press is not operating properly, or has been damaged, left outdoors or has been in contact with water.
14. **DO NOT** use the drill press as a toy. **DO NOT** use near or around children.
15. **CHECK** all drill bits, cutting tools, sanding drums, or other accessories for damage before installing in the drill press chuck. Damaged items can cause damage to the drill press and or serious injury.
16. Before leaving the drill press, **LOCK** the ON/OFF switch with a padlock (not included) to prevent unauthorized use.
17. **DO NOT** install or use any drill bit that exceeds 7-inches in length or that extends 6-inches below the chuck jaws. The drill bit can suddenly bend or break.
18. **DO NOT** try to drill a workpiece that is too small to be securely held to the table or in a vise.
19. **DO NOT** operate this drill press until it is assembled and installed according to the instruction manual.
20. **DO NOT** leave the drill press plugged into the electrical outlet. Unplug the drill press from the outlet when not in use and before servicing, changing bits and cleaning.
21. **DO NOT USE** router bits, shaper cutters, circle (fly) cutters, rotary planers or wire wheels in this drill press.
22. **FOLLOW** all electrical and safety codes, including the National Electric Code (NEC) and the Occupational Safety and Health Regulations (OSHA). All electrical connections and wiring should be made by qualified personnel only.
23. **LET THE CHUCK REACH FULL SPEED** before starting drill operations.
24. **MAKE SURE** there are no foreign objects, nails, stones in the workpiece.
25. **NEVER PERFORM LAYOUT, ASSEMBLY OR SETUP WORK** on the table/work area when the drill press is running.

26. **NEVER START THE DRILL PRESS BEFORE CLEARING THE TABLE OF ALL OBJECTS** (tools, scrap pieces, etc.). Debris can be thrown at high speed.

27. **NEVER START THE DRILL PRESS** with the drill bit, cutting tool, or sanding drum against the workpiece. Loss of control of the workpiece can cause serious injury.

28. **OBTAIN ADVICE FROM YOUR SUPERVISOR**, instructor, or another qualified person if you are not familiar with the operation of this drill press.

29. **PROPERLY SUPPORT** long or wide workpiece and clamp to the table.

30. **PROPERLY SECURE** the drill bit, cutting tool, or sanding drum in the chuck before operating the drill press.

31. **REPLACE** a damaged cord immediately. **DO NOT** use a damaged cord or plug.

32. **SECURE** the drill press to the floor or work bench. Vibration can cause the drill press to slide, walk or tip over. Do not attach the drill press to a mobile base.

33. **SECURE** the workpiece firmly against the table. Do not attempt to drill a workpiece that does not have a flat surface against the table, or that is not secured by a vise. Prevent the workpiece from rotating by clamping it to the table or by securing it against the drill press column. Loss of control of the workpiece can cause serious injury.

34. **SECURELY LOCK** the head and table support to the column, and the table to the table support before operating the drill press.

35. The drill press is designed for home use or light commercial duty **ONLY**.

36. **TO REDUCE THE RISK OF ELECTRICAL SHOCK**, do not use outdoors. Do not expose to rain. Store indoors in a dry area.

37. **TURN THE DRILL PRESS OFF** and unplug from power source. Wait for the drill bit, cutting tool, or sanding drum to come to a complete STOP before cleaning off the table/work area, removing or securing workpiece, or changing setup.

38. **USE** only drill bits, cutting tools, sanding drums, or other accessories with proper shank size recommended in this instruction manual. The wrong size shank can cause damage to the drill press and/or serious injury.

39. **USE RECOMMENDED SPEEDS** for all operations. Improper speeds may cause the machine to malfunction causing damage to the drill press and or serious injury.

ELECTRICAL REQUIREMENTS

TO PREVENT electrical shock, follow all electrical and safety codes, including the National Electrical Code (NEC) and the Occupational Safety and Health Regulations (OSHA). All electrical connections and wiring should be made by qualified personnel only.

TO REDUCE the risk of electrical shock, **DO NOT** use machine outdoors. **DO NOT** expose to rain or moisture. Store indoors in a dry area.

DO NOT connect the machine to the power source before you have completed the set up process.

DO NOT connect the machine to the power source until instructed to do so.

The motor supplied with the drill press is a dual voltage 115/230-volt, single phase motor. The motor is wired from the factory for 115-volt operation. To change to 230-volt operation, see CHANGING MOTOR VOLTAGE in the adjustment section in this manual.

GROUNDING INSTRUCTIONS

⚠ WARNING

This machine **MUST BE GROUNDED** while in use to protect the operator from electric shock.

In the event of a malfunction or breakdown, **GROUNDING** provides the path of least resistance for electric current and reduces the risk of electric shock. The plug **MUST** be plugged into a matching electrical receptacle that is properly installed and grounded in accordance with **ALL** local codes and ordinances.

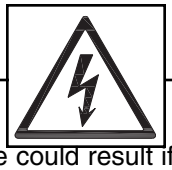
If a plug is provided with your machine **DO NOT** modify the plug. If it will not fit your electrical receptacle, have a qualified electrician install the proper connections to meet all electrical codes local and state. All connections must also adhere to all of OSHA mandates.

IMPROPER ELECTRICAL CONNECTION of the equipment-grounding conductor can result in risk of electric shock. The conductor with the green insulation (with or without yellow stripes) is the equipment-grounding conductor. **DO NOT** connect the equipment-grounding conductor to a live terminal.

Check with a qualified electrician or service personnel if you do not completely understand the grounding instructions, or if you are not sure the tool is properly grounded.

PLUGS/RECEPTACLES

⚠ WARNING



- Electrocution or fire could result if this machine is not grounded properly or if the electrical configuration does not comply with local and state electrical codes.
- **MAKE CERTAIN** the machine is disconnected from power source before starting any electrical work.
- **MAKE SURE** the circuit breaker does not exceed the rating of the plug and receptacle.

The motor supplied with your machine is a 115/230 volt, dual voltage motor. Never connect the green or ground wire to a live terminal.

The machine should only be connected to an outlet having the same configuration as the plug.

EXTENSION CORDS

⚠ WARNING

To reduce the risk of fire or electrical shock, use the proper gauge of extension cord. When using an extension cord, be sure to use one heavy enough to carry the current your machine will draw.

The smaller the gauge-number, the larger the diameter of the extension cord is. If in doubt of the proper size of an extension cord, use a shorter and thicker cord. An undersized cord will cause a drop in line voltage resulting in a loss of power and overheating.

⚠ CAUTION

USE ONLY a 3-wire extension cord that has a 3-prong grounding plug and a 3-pole receptacle that accepts the machine's plug.

If you are using an extension cord outdoors, be sure it is marked with the suffix "W-A" ("W" in Canada) to indicate that it is acceptable for outdoor use.

Make certain the extension cord is properly sized, and in good electrical condition. Always replace a worn or damaged extension cord immediately or have it repaired by a qualified person before using it.

Protect your extension cords from sharp objects, excessive heat, and damp or wet areas.

MINIMUM RECOMMENDED GAUGE FOR EXTENSION CORDS (AWG)

115 VOLT OPERATION ONLY

	25' LONG	50' LONG	100' LONG
0 to 6 Amps	18 AWG	16 AWG	16 AWG
6 to 10 Amps	18 AWG	16 AWG	14 AWG
10 to 12 Amps	16 AWG	16 AWG	14 AWG
12 to 15 Amps	14 AWG	12 AWG	Not recommended

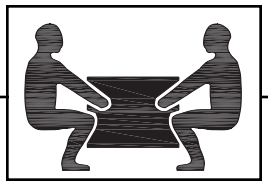
MINIMUM RECOMMENDED GAUGE FOR EXTENSION CORDS (AWG

230 VOLT OPERATION ONLY

	25' LONG	50' LONG	100' LONG
0 to 6 Amps	18 AWG	18 AWG	16 AWG
6 to 10 Amps	18 AWG	18 AWG	14 AWG
10 to 12 Amps	16 AWG	16 AWG	14 AWG
12 to 15 Amps	14 AWG	12 AWG	Not recommended

UNPACKING & INVENTORY

⚠ WARNING



- The machine is heavy, two people are required to unpack and lift.
- Use a safety strap to avoid tip over when lifting machine.

Check shipping carton and machine for damage before unpackaging. Carefully remove packaging materials, parts and machine from shipping carton. Always check for and remove protective shipping materials around motors and moving parts. Lay out all parts on a clean work surface.

Remove any protective materials and coatings from all of the parts and the drill press. The protective coatings can be removed by spraying WD-40 on them and wiping it off with a soft cloth. This may need redone several times before all of the protective coatings are removed completely.

After cleaning, apply a good quality paste wax to any unpainted surfaces. Make sure to buff out the wax before assembly.

Compare the items to inventory figures; verify that all items are accounted for before discarding the shipping box.

⚠ WARNING

If any parts are missing, do not attempt to plug in the power cord and turn “ON” the machine. The machine should only be turned “ON” after all the parts have been obtained and installed correctly. **For missing parts, contact Steel City at 1-877-SC4-TOOL.**

A. Drill press head and motor assembly.

B. Base

C. Light assembly

D. Table

E. Column

A. Keyed chuck
B. Spindle adapter remover
C. Chuck key
D. Hex head screws(2), with flat washer(4),and hex nuts(2)
(accessory hardware)
E. Light assembly clamp, hex socket head screws(2), and lock washer(2)
(plastic sleeve not show)
F. Table raise/lower handle
G. Hand wheel spokes (3)
H. Hex head screws M10x40mm (4)
I. Hex wrenches (2)
J. Chuck arbor (#2MT)

ASSEMBLY

⚠ WARNING

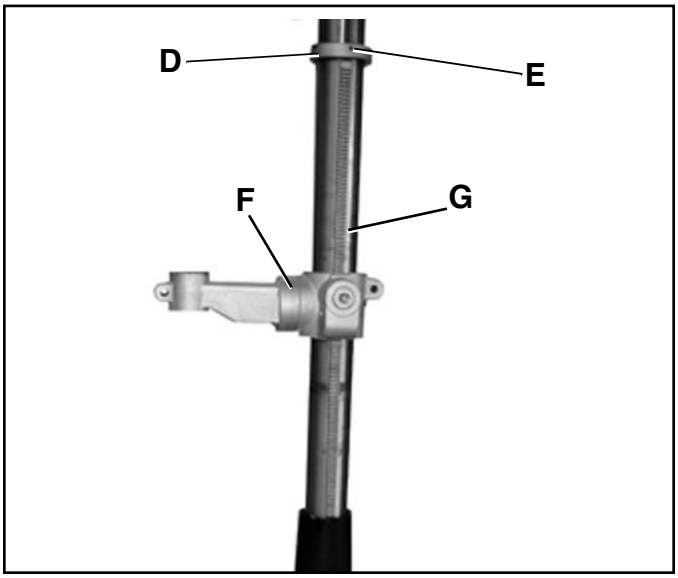
- The drill press is a heavy machine; two people may be required for certain assembly operations.
- **DO NOT** assemble the drill press until you are sure the tool is unplugged from the power source.
- **DO NOT** assemble the drill press until you are sure the power switch is in the “OFF” position.
- For your own safety, **DO NOT** connect the drill press to the power source until the machine is completely assembled and you read and understand the entire User Manual.

COLUMN, BASE AND TABLE ASSEMBLY

Fig. 7

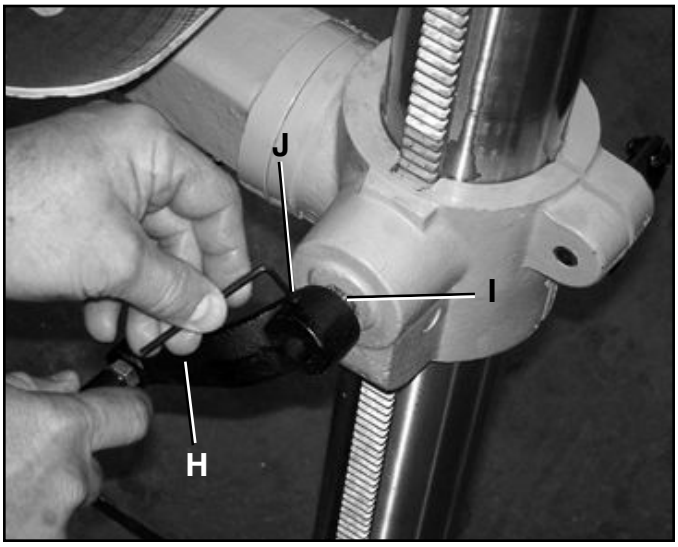
1. Attach the column (A) to the base (B) using the five M10 x 40mm hex head screws (C). **SEE FIG. 7.**

Fig. 7A



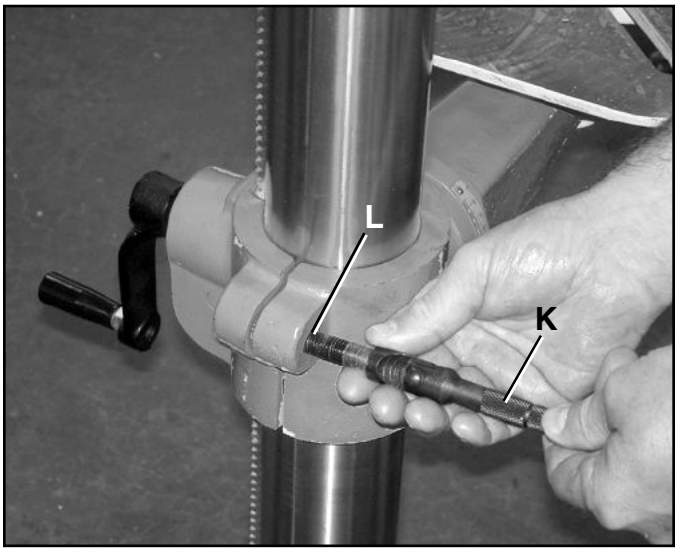
2. Loosen set screw (E) and remove ring (D) from the column. **SEE FIG 7A.**
3. Place Table Bracket Assembly (F) over top of column making sure the notch in the side of the bracket matches up with the rack (G).
4. Replace ring (D) and retighten set screw (E).

Fig. 8



5. Attach the table raising and lowering handle (H) on the worm gear shaft (I) and tighten the set screw (J) against the flat on the worm gear shaft. **SEE FIG. 8.**

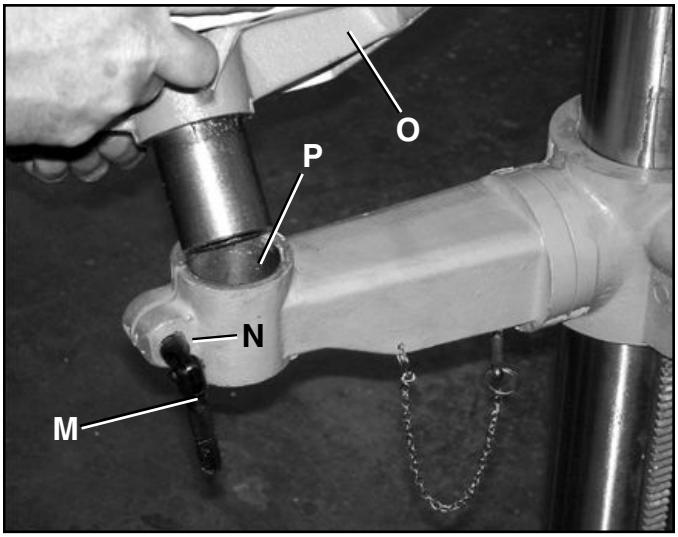
Fig. 9



6. Thread the stud of the table lock handle (K) into the hole (L) in the rear of the table bracket. **SEE FIG. 9.**

NOTE: On the table bracket, one hole is threaded and one is not. Insert the stud through the unthreaded hole and screw into the threaded hole.

Fig. 10



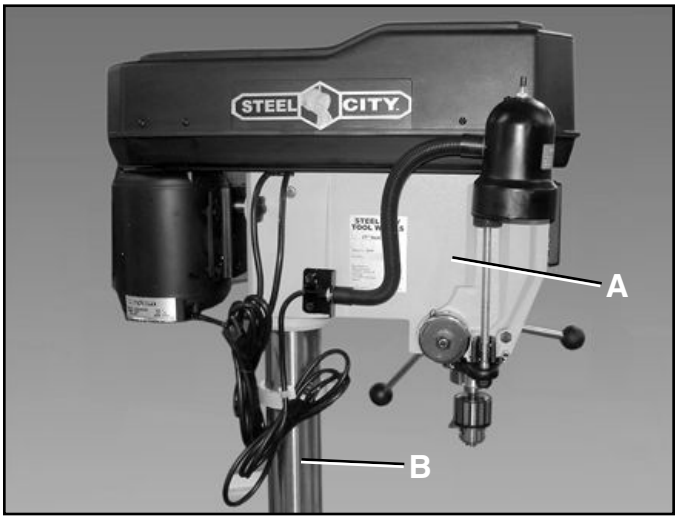
7. Assemble the threaded end of the table rotation lock handle (M) into hole (N) in the front, right side of the table support. Do not completely tighten handle at this time. Note: The table rotation lock handle is the smaller of the two lock handles. **SEE FIG. 10.**
8. Insert the table (O) into the mounting hole (P) table support. Rotate the table to desired position and tighten table rotation locking handle.

DRILL PRESS HEAD AND MOTOR ASSEMBLY

⚠ WARNING

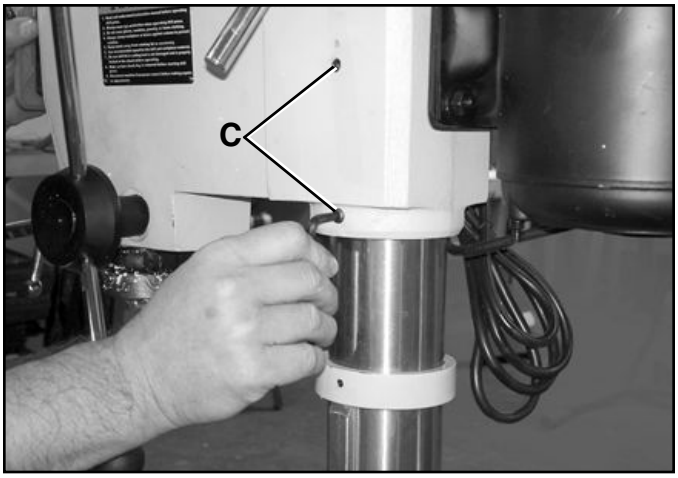
- The drill press is a heavy machine; two people may be required for certain assembly operations.
- **MAKE CERTAIN** the drill press is disconnected from the power source.

Fig. 11



1. Seat the drill press head (A) on the column (B). **SEE FIG. 11.**

Fig. 12

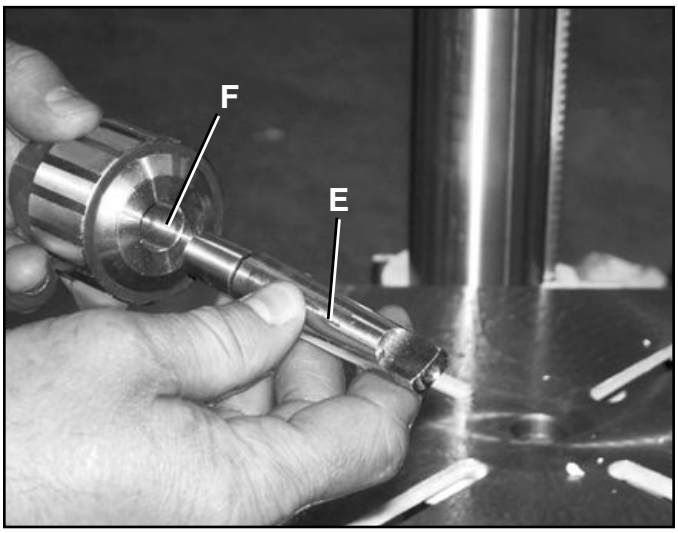


2. Align the drill press head with the table and base and tighten the two head locking screws (C). **SEE FIG. 12.**

Fig. 13

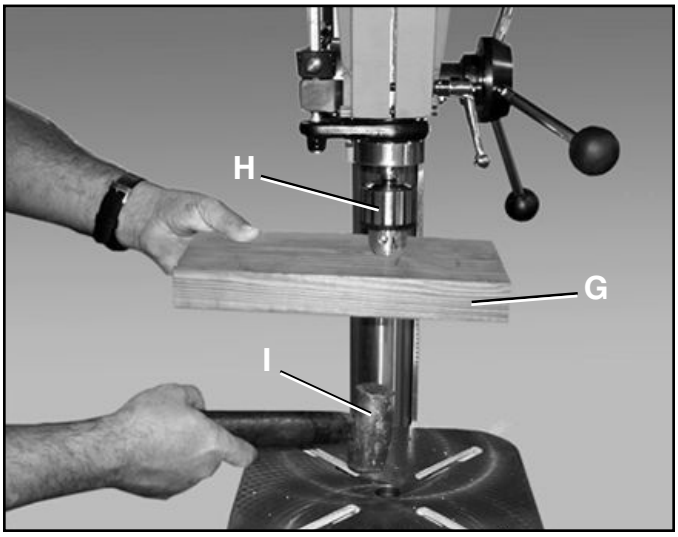
3. Install the three hand wheel spokes (D) by screwing them clockwise into the hand wheel hub. **SEE FIG. 13.**

Fig. 14



4. Before chuck and spindle installation, make certain that the spindle taper (E) and the tapered hole in the chuck (F) are clean and free of grease, lacquer, or rust preventive coating. **SEE FIG. 14, page 18.**

Fig. 15



5. Open the chuck jaws completely. Make sure the jaws are completely recessed inside the chuck.
6. Seat the chuck onto the drill press spindle as far as it will go by placing a wooden block (G) under the chuck (H) and tap the block up with a hammer (I). **SEE FIG. 15.**

Important: **DO NOT** tap the chuck directly with a metal hammer.

LAMP INSTALLATION

Fig. 16

1. Install lamp onto drill press head using two hex socket head screws and two lock washers. **SEE FIG. 16.**

NOTE: The clear plastic sleeve goes around the lamp cord where it passes under the mounting clamps.

FASTENING DRILL PRESS

Fig. 17

To keep the drill press from tipping, sliding, or walking, it can be fastened to the floor surface. The machine base has two holes (A) at the center of the base where it can be fastened to the floor. **SEE FIG. 17.**

ADJUSTMENTS

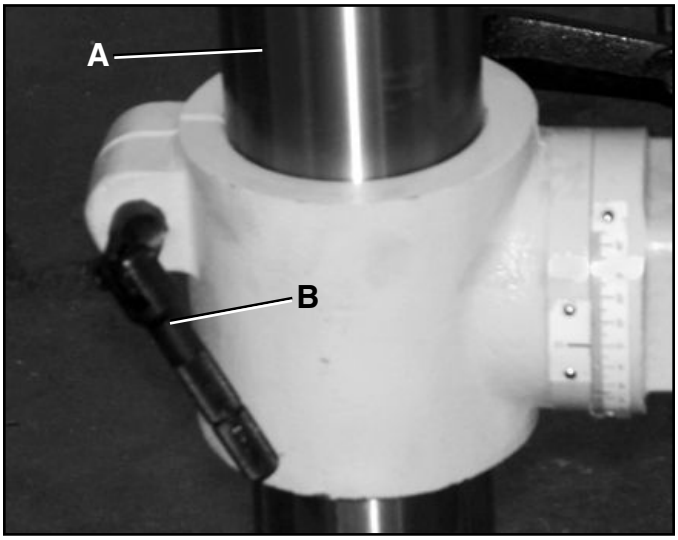
⚠ WARNING

MAKE CERTAIN that the drill press is disconnected from the power source.

ADJUSTING TABLE

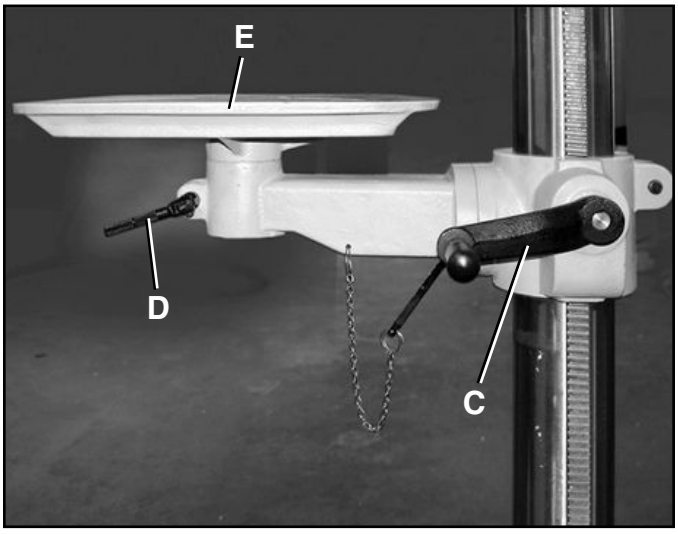
1. To raise or lower work table on the column (A), loosen lock handle (B). **SEE FIG. 18.**

Fig. 18



2. Turn the table raising/lowering handle (C) clockwise to raise the table and counter-clockwise to lower the table. **SEE FIG. 19.**
3. After the table is at the desired height, tighten the table height lock handle (B) in Fig. 18.

Fig. 19

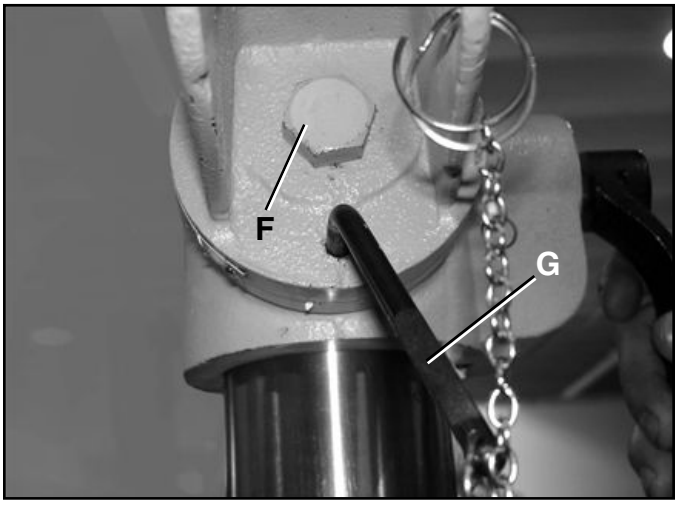


NOTE: Always raise (rather than lower) the table to the final position to allow the gears to mesh and prevent slippage.

4. The table (E) can be rotated 360 degrees by loosening the table rotation lock handle (D) and rotating the table to the desired position, then tighten the handle.

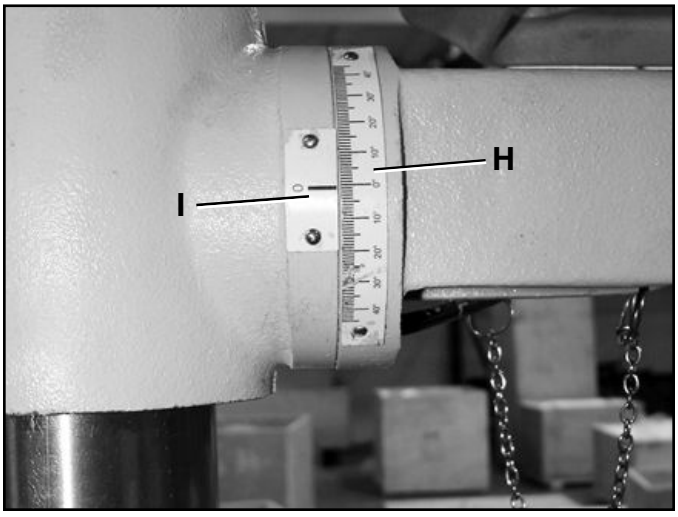
NOTE: For thru-drilling operations, make sure the table center hole is aligned with the drill bit.

Fig. 20



5. The table can be tilted right or left by loosening the 5/8-11 x 1-1/2" table locking bolt (F), then removing the table alignment pin (G). **SEE FIG. 20.**
6. The table can now be tilted to the desired angle. Retighten the table locking bolt.

Fig. 21



7. A tilt scale (H) is provided on the table bracket casting to indicate the degree of tilt. A witness line (I) is provided on the table to align with the tilt scale. **SEE FIG. 21.**
8. **NOTE:** When the table is returned to the level position, replace the table alignment pin. This will position the table surface 90 degrees to the spindle. The table locking bolt then must be tightened.

DRILL SPEEDS

⚠ WARNING

MAKE CERTAIN the drill press is disconnected from the power source.

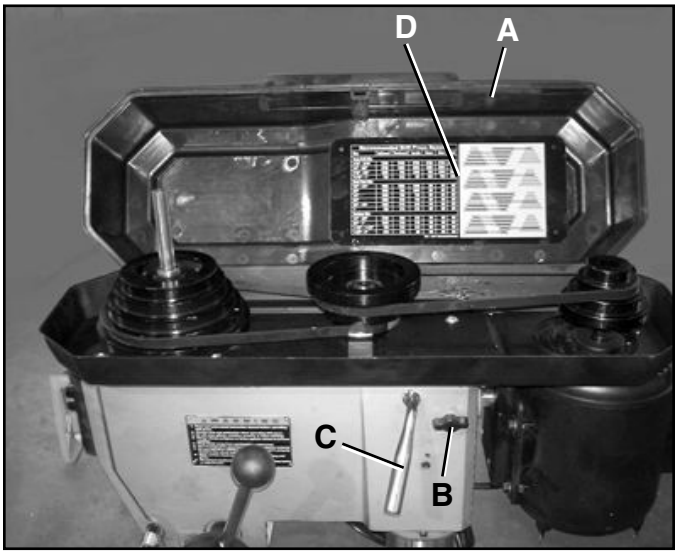
Sixteen drill speeds (215, 310, 340, 450, 490, 510, 600, 675, 735, 750, 1200, 1380, 1500, 1850, 2035 and 2720 RPM) are available with your drill press.

ADJUSTING BELT TENSION

⚠ WARNING

MAKE CERTAIN the drill press is disconnected from the power source.

Fig. 22



1. Open the belt cover (A). **SEE FIG. 22.**
2. Loosen the tension lock knobs (B), one on each side.
3. Rotate the belt tension handle (C) forward, away from the motor.
4. Position both belts on selected pulleys according to the drill speed chart (D).
5. Rotate the belt tension handle back, towards the motor to apply tension on the belts.

NOTE: The belt should be just tight enough to prevent slipping. Excessive tension will reduce the life of the belt, pulleys and bearings. Correct tension is obtained when the belt can be flexed about 1" out of line midway between the pulleys using light finger pressure.

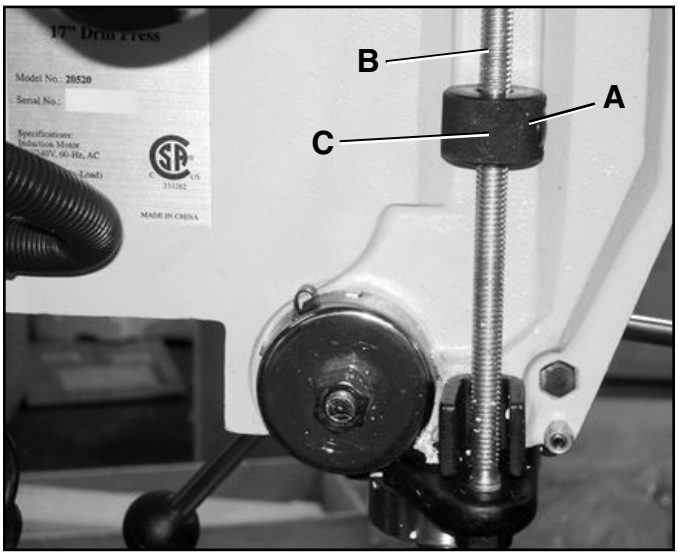
6. Tighten both tension lock knobs.

DRILLING HOLES TO DEPTH

⚠ WARNING

MAKE CERTAIN the drill press is disconnected from the power source.

Fig. 23



1. Insert the drill bit into chuck, using the chuck key provided, and tighten.
2. Place the workpiece on the drill press table. Raise the drill press table until the workpiece is 1/8-in. from the drill bit.

NOTE: Make sure the workpiece is secured to the table properly.

3. Turn the depth stop (C) on the threaded depth scale (B) until the bottom of the stop is aligned with the dimension you want to drill on the scale. **SEE FIG. 23.**
4. To quickly move the depth stop, press in on the quick release button (A) and move the depth stop up or down the depth scale. When at desired depth, release button (A).
5. Drill a test hole to check the depth.

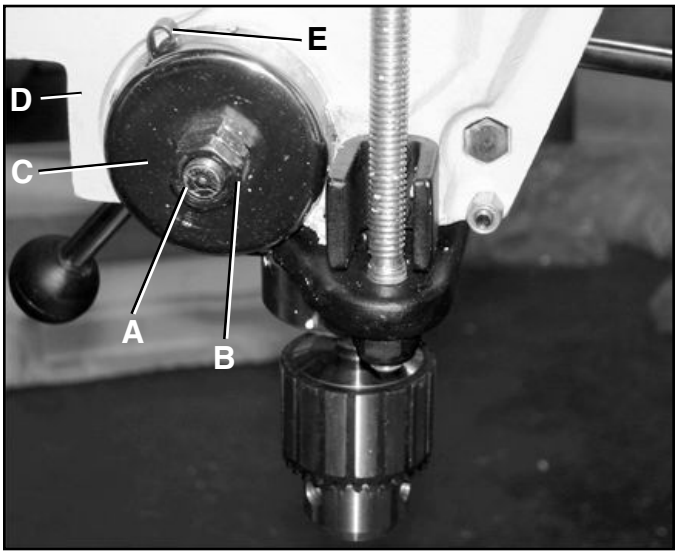
ADJUSTING RETURN SPRING

The drill chuck will automatically return slowly to its upper position when the handle is released. The return spring was properly adjusted at the factory. However, to adjust, if necessary:

⚠ WARNING

- **MAKE CERTAIN** the drill press is disconnected from the power source.

Fig. 24



1. Loosen both nuts (A) and (B). Make sure that the spring housing (C) remains engaged with head casting (D). **SEE FIG. 24.**

2. While firmly holding the spring housing (C) pull the spring housing out and rotate it (counter-clockwise to increase or clockwise to decrease the spring tension) until the boss (E) is engaged with the next notch on the spring housing.

IMPORTANT: Because the return spring is under tension, it will want to unwind (clockwise). Make sure you have a firm hold of the spring housing before pulling it out.

3. Turn the nut (B) until it contacts the spring housing (C), then back the nut (B) out 1/4 turn from the spring housing (C). Tighten the nut (A) against the nut (B) to lock the nuts from turning.

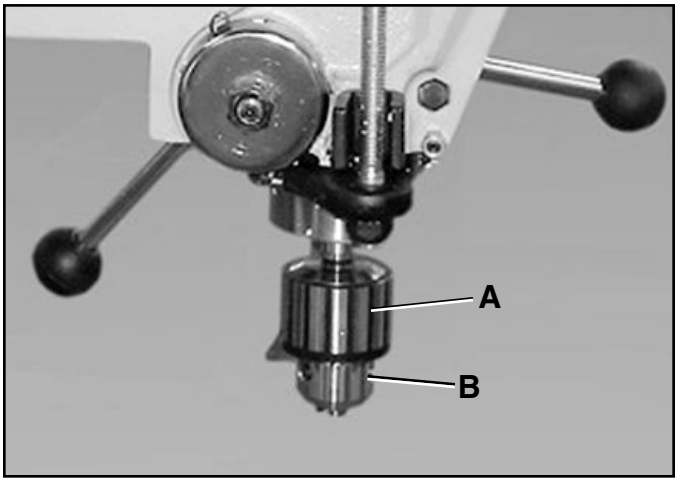
IMPORTANT: The inside nut should not contact spring housing when tightened.

INSTALLING AND REMOVING DRILL BITS

⚠ WARNING

MAKE CERTAIN the drill press is disconnected from the power source.

Fig. 25



1. Turn the upper barrel (A) to open the chuck jaws slightly larger than the diameter of the drill bit. **SEE FIG. 25.**

2. Insert the smooth end of drill bit in the chuck as far as it will go, then back the bit out 1/16” (or up to the beginning of the drill bit flutes).

3. Center the drill bit in the chuck before tightening the chuck. Using the supplied chuck key, insert key into one of the holes on lower barrel (B), securely tighten the bit in chuck and remove chuck key.

⚠ WARNING

NEVER run drill press to install or tighten a drill bit or cutter in the keyed chuck.

⚠ WARNING

Make sure that the drill bit or accessory is properly secured and chuck key is removed before starting the drill press.

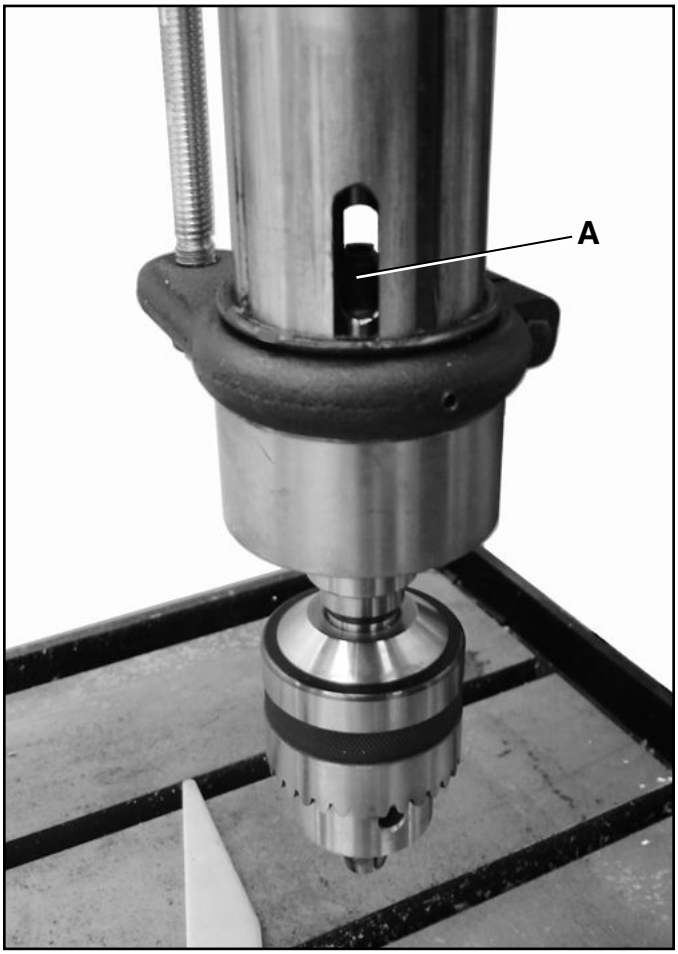
REMOVING THE CHUCK AND SPINDLE

⚠ WARNING

MAKE CERTAIN the drill press is disconnected from the power source.

1. Remove drill bit from the chuck.
2. Lower the quill and lock it in place using the quill locking handle.
3. Rotate the chuck and spindle assembly by hand until the two holes in the side of the quill and the spindle align. **SEE FIG. 25A.**

Fig. 25A



4. Insert the tapered end of the spindle adaptor remover into the hole (A) with the flat part towards the top.
5. Using a mallet or hammer drive the spindle adaptor remover into the quill.

NOTE: The chuck will drop out of the quill; be prepared to catch it.

ADJUSTING THE SPLIT HEAD CASTING

⚠ WARNING

MAKE CERTAIN the drill press is disconnected from the power source.

NOTE: The Head Casting and quill have been adjusted at the factory to give the quill the proper sliding fit in the head casting. However over time “play” between the quill and head casting may develop. To adjust:

1. Loosen the lock nut (A) on the left side of the head casting. **SEE FIG 25B.**

Fig. 25B

2. Using a hex wrench slightly tighten the adjusting screw (B) on the right side of the head casting.
3. Rise and lower the quill several times to make sure that the quill does not bind.
4. Retighten the lock nut (A).

OPERATIONS

⚠ WARNING

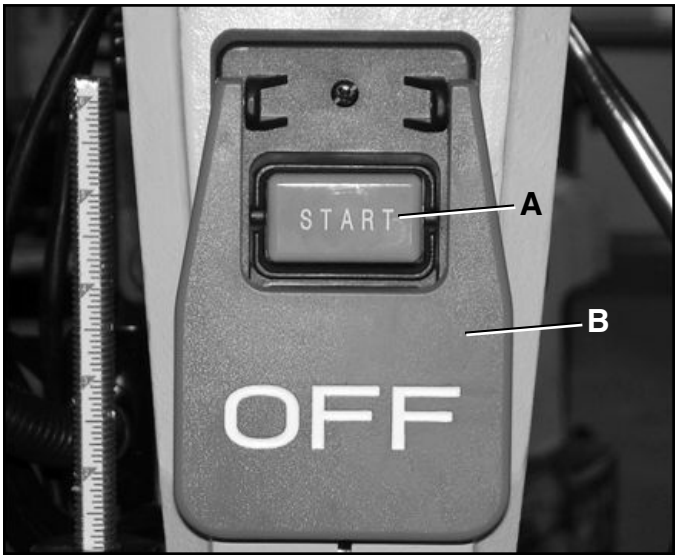
- **DO NOT** expose the drill press to rain or operate the in damp locations.
- **MAKE SURE** all parts have been assembled correctly and are in working order.

SWITCH OPERATION

⚠ WARNING

CHILDPROOF THE WORKSHOP AREA by removing switch keys, unplugging tools from the electrical receptacles, and using padlocks to lock out the switch.

Fig. 26



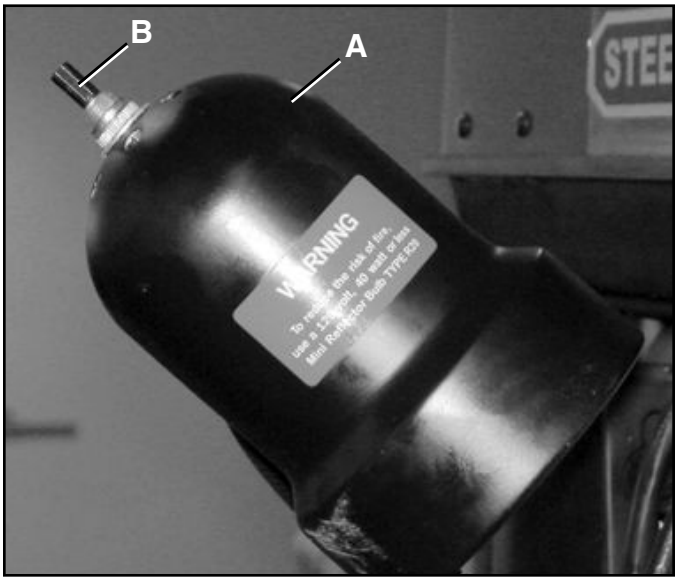
1. The ON/OFF switch is located on the front of the drill press head.
2. To turn the Drill Press “ON”, press the green START button (A) in one-half inch. Note: There is a safety feature on the switch to insure that the switch must be completely pressed before the motor will start. **SEE FIG. 26.**
3. To turn the Drill Press “OFF”, press the large red OFF paddle (B) or lift the paddle and press directly on the red “OFF” button.
4. When the Drill Press is not in use, the “START” button should be locked so that it cannot be started.
5. A padlock with a long hasp can be purchased. It then can be placed through the holes in the sides of the “START” button and locked, thus preventing unauthorized use.
6. To use the Drill Press, unlock and remove the padlock from the “START” button.

FLEXIBLE LAMP

⚠ WARNING

To reduce the risk of fire, use only 40 watt or less, 120 volt, light bulb (not supplied). Make sure to use a rough duty type light bulb. **DO NOT** use a standard household light bulb. The light bulb should not extend below the lamp shade.

Fig. 27



The flexible lamp (A) operates independently of the drill press and has its own power cord. To turn the lamp ON and OFF, rotate the switch (B) in the clockwise direction only. **SEE FIG. 27.**

⚠ CAUTION

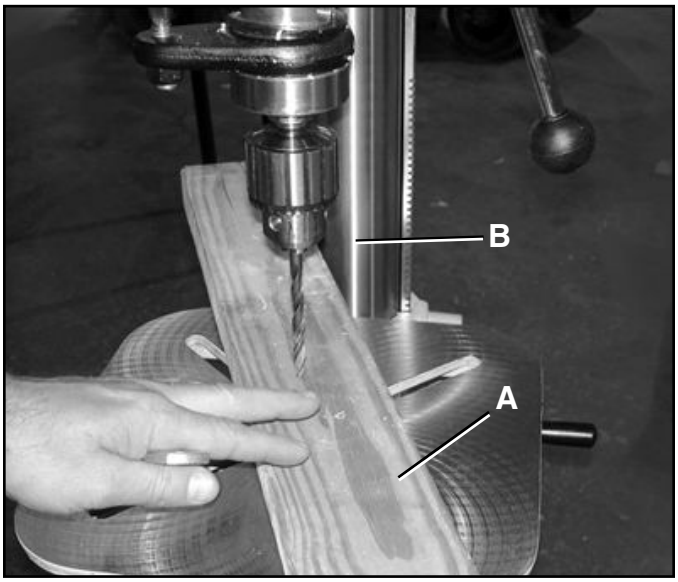
The flexible lamp housing will remain hot for a few minutes after turning it OFF. Avoid contact with housing until it is cool.

SUPPORTING WORKPIECE

⚠ WARNING

IMPORTANT: When the workpiece (A) is long enough, position it on the table with one end against the left side of the column (B) to prevent the workpiece from rotating. If it is not possible to support the workpiece against the column, clamp the workpiece to the table. A vise can be used to secure a small workpiece that is too small to be clamped to the table. The vise must be secured to the table to keep it from rotating. If you are using a backup board, it must also be properly supported or clamped. **SEE FIG. 28.**

Fig. 28



CORRECT DRILLING SPEEDS

Factors that determine the correct drilling speed are: the type and density of the workpiece, the size of the hole, the type and size of drill bit or other cutter, and the quality of cut desired.

⚠ WARNING

ALWAYS use the recommended speed for the drill bit and workpiece.

DRILLING WOOD

Twist drill bits, usually intended for metal drilling, can also be used for boring holes in wood. However, Brad point or Forstner bits are generally preferred for working in wood. These bits cut a flat bottom hole and are designed for removal of wood chips. Do not use hand bits which have a screw tip or auger bits. At drill press speeds, they can lift and rotate the workpiece.

For through boring, align the table so that the bit will go through the center hole. Scribe a vertical line on the front of the column and a matching mark on the table bracket and the drill press head, so that the table and drill press head can be clamped in the center position at any height.

Feed the bit slowly when it is close to cutting through the wood to prevent splintering the bottom face. Use a scrap piece of wood as backup under the workpiece. This helps to reduce splintering and protects the point of the bit.

DRILLING METAL

⚠ WARNING

NEVER hold the workpiece in your bare hands. **ALWAYS** use clamps or vises to hold your workpiece.

Twist drill bits should only be used in drilling metals. Never hold the workpiece in your bare hands; always use clamps or vises. The drill bit may seize the work at any time, especially when breaking through the workpiece. If the workpiece is whirled out of the operator's hand, the operator may be injured. The drill bit can also be broken if the workpiece strikes the column.

The workpiece must be clamped or securely held in a vise while drilling. Any tilting, twisting, or shifting results not only in a rough hole, but also increases the likelihood of drill bit breakage. For flat work, lay the workpiece on a wooden base and clamp it firmly down against the table to prevent it from turning. If the workpiece is of irregular shape and cannot be laid flat on the table, it should be securely blocked and clamped.

When drilling metal, it will be necessary to lubricate the tip of the drill bit with oil to prevent it from overheating.

DRILLING OPERATION

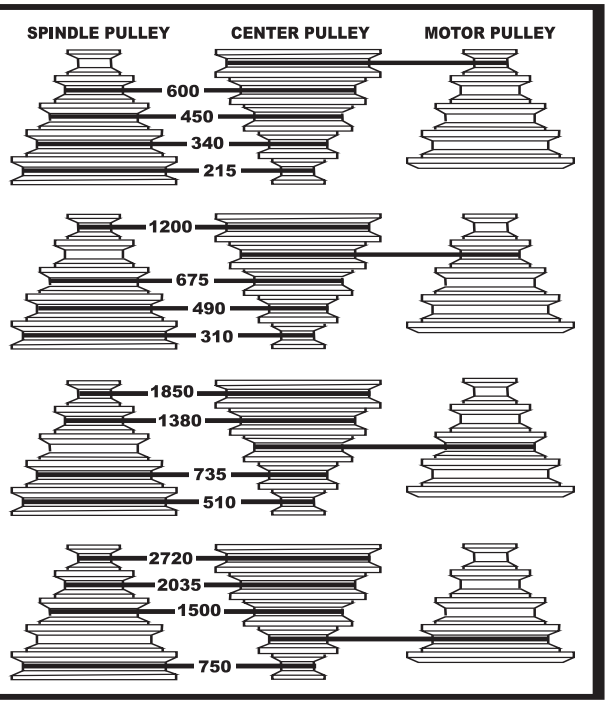
Use a center punch to dent the workpiece where you want the hole. This will keep the bit from walking when you start the drill operation. Make sure the workpiece is properly supported or secured to the table. For thru-drilling, make sure the table center hole is aligned with the drill bit. Turn the drill press ON and start to feed the drill chuck down with the feed handles.

FEEDING TOO RAPIDLY may cause the belt or drill bit to slip or break, the motor to stall, the workpiece to pull loose from the table. Never try to rush your work; allow the drill press to work smoothly.

See Drill Speed Chart on page 27.

Recommended Drill Press Speeds						
Size	Softwood	Hardwood	Acrylic	Brass	Alum	Steel
Twist Drill Bits						
1/16" - 3/16"	2720	2720	2720	2720	2720	2720
1/4" - 3/8"	2720	1500	2035	1200	2035	750
7/16" - 5/8"	1500	750	1500	750	1500	600
11/16" - 1"	750	510	NR	340	750	340
Brad Point Bits						
1/8" - 1/4"	1850	1200	1500	NR	NR	NR
3/8"	1850	750	1500	NR	NR	NR
1/2"	1850	750	750	NR	NR	NR
5/8"	1850	510	750	NR	NR	NR
3/4" - 7/8"	1200	215	510	NR	NR	NR
1"	750	215	215	NR	NR	NR
Forstner Bits						
1/4" - 5/8"	2720	600	215	NR	NR	NR
3/4" - 1"	1500	510	215	NR	NR	NR
1-1/8" - 1-1/4"	750	215	215	NR	NR	NR
1-3/8" - 2"	510	215	NR	NR	NR	NR

NR = NOT RECOMMENDED



CHANGING MOTOR VOLTAGE

⚠ WARNING

MAKE CERTAIN to disconnect the machine from the power source before working on motor.

Have a certified electrician make all electrical connections. All local and state codes must be maintained. The motor supplied with the Drill Press is a dual voltage 115/230-volt, single phase motor. The motor is wired from the factory for 115-volt operation. To change to 230-volt operation, proceed with the following instructions. It is also necessary to replace the 115 volt plug, supplied with your machine, with a UL/CSA Listed plug (not included) suitable for 230 volts and the rated current of the motor. The motor with a 230 volt plug should only be connected to an outlet having the same configuration as the plug. No adapter is available or should be used with the 230 volt plug.

1. Make sure switch is OFF and disconnect power cord from power source.
2. Verify on the motor tag that motor is dual voltage.
3. If motor tag states that it is dual voltage remove junction box cover on motor.
4. Using wiring diagram on inside of junction box cover, reconnect motor leads for 230-volt operation.
5. Replace junction box cover.
6. Replace 115 volt plug with a UL/CSA Listed 230 volt plug rated for current of the motor.
7. The ON/OFF switch is a 4-pole switch and does not need any modifications.

MAINTENANCE

LUBRICATION

⚠ WARNING

Turn the power switch OFF and unplug the power cord from its power source.

The drill press has sealed lubricated bearings in the motor housing that do not require any additional lubrication from the operator.

The quill and spindle assemblies should be periodically lubricated. Lower the quill assembly and squirt or wipe a thin film of lightweight machine oil on the entire surface. Place a few drops of light machine oil down the spindle assembly. Raise and lower the quill several times to distribute the oil evenly.

CLEANING

With the drill press unplugged, blow off motor with low-pressure air to remove dust or dirt. Air pressure above 50 P. S. I. should not be used as high-pressured air may damage insulation. The operator should always wear eye protection when using compressed air.

Do not use a shop vacuum to clean metal shavings. The metal shavings can cause an explosion or fire.

Do not allow chips and dust to accumulate under drill press. Keep area clean and in safe order.

⚠ WARNING

DO NOT USE FLAMMABLE MATERIALS to clean the drill press.

After cleaning, apply a good quality paste wax to any unpainted surfaces. Make sure to buff out the wax before operation.

⚠ WARNING

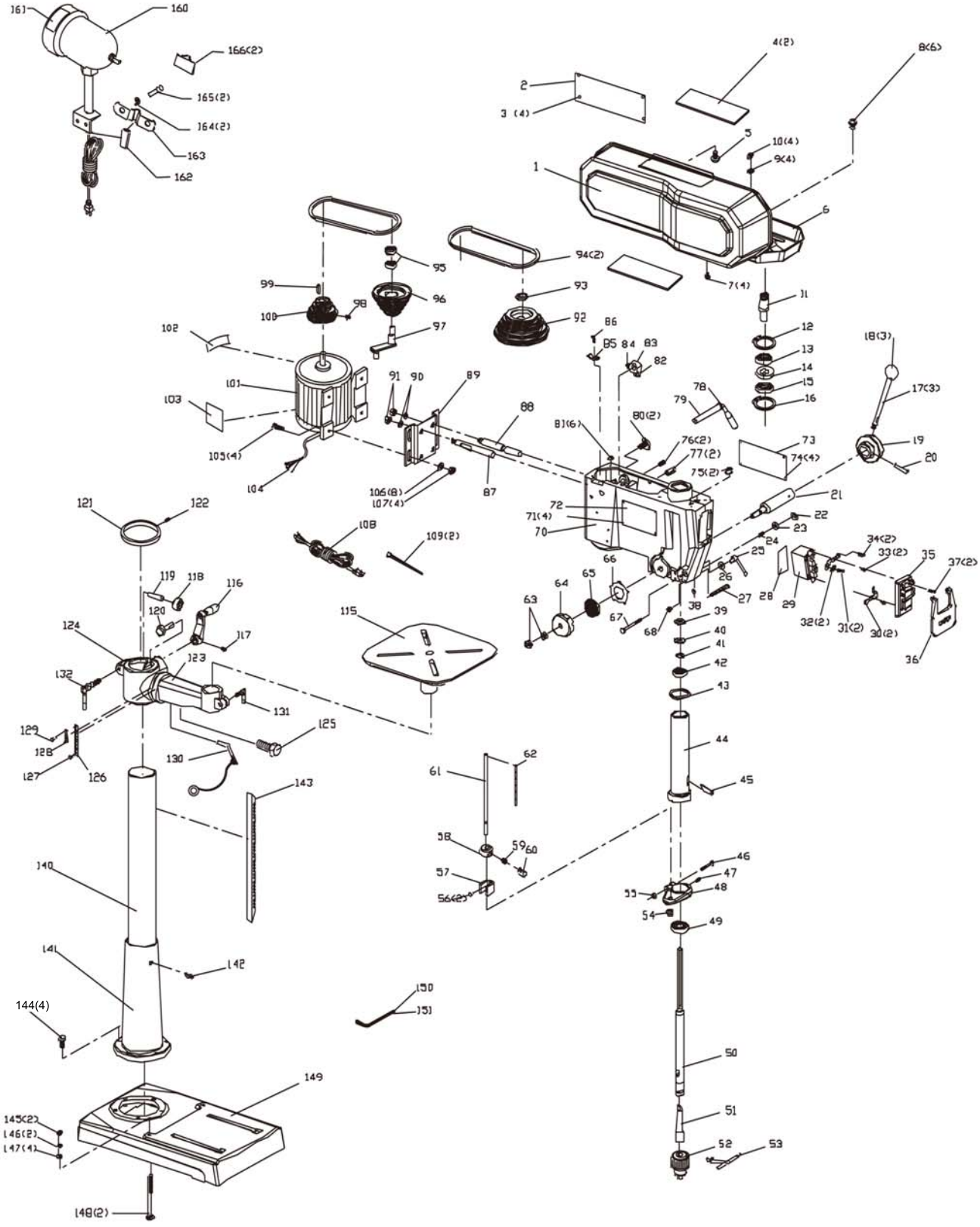
ONLY trained personnel should perform repairs to the drill press. Unauthorized repairs or replacement with non-factory parts could cause serious injury to the operator and damage to the drill press.

TROUBLESHOOTING GUIDE

TO PREVENT INJURY TO YOURSELF or damage to the drill press, turn the switch to the OFF position and unplug the power cord from the electrical receptacle before making any adjustments.

PROBLEM	LIKELY CAUSE(S)	SOLUTION
Motor does not start or does not come up to full speed	1. START button not completely depressed. 2. Defective switch. 3. Defective capacitor. 4. Low line voltage. 5. Defective motor.	1. Push green START button in fully (1/2 inch). 2. Have switch replaced. 3. Have capacitor replaced. 4. Correct low line voltage condition. If machine is plugged into an extension cord, disconnect and plug directly into wall outlet. 5. Have motor replaced. NOTE: #2, #3, #4, and #5 must be done by a qualified service technician.
Motor stalls or circuit breakers open frequently	1. Circuit overload. 2. Low line voltage. 3. Motor overload. 4. Incorrect fuses on circuit breakers. 5. Short circuit in motor; loose connections or worn insulation on lead wires.	1. Reduce circuit load (turn off other appliances). 2. Correct low line voltage condition. Check line voltage with a multi-meter. If the machine is plugged into an extension cord, unplug it from the extension cord and plug directly to the wall outlet. 3. Reduce load on motor, slow down feed rate. 4. Have correct fuses on circuit breakers installed by a qualified electrician. 5. Inspect terminals in motor for damaged insulation and shorted wires and have them replaced. Check all power lead connections.
Motor running too hot	1. Restricted air circulation due to dust accumulation. 2. Motor overload.	1. Clean dust and restore normal air circulation around motor. 2. Reduce load on motor, slow down feed rate.
Drill bit stalls or slips	1. Belt is incorrectly tensioned. 2. Drill bit is not securely tightened in chuck.	1. Adjust belt tension. See changing speeds and adjusting belt tension in “OPERATIONS AND ADJUSTMENTS”. 2. Install drill bit properly. See installing and removing drill bit in “OPERATIONS AND ADJUSTMENTS”.
Drill bit or material smokes or burns	1. Incorrect spindle speed. 2. Chips not exiting out of drill hole. 3. Dull drill bit.	1. Reduce spindle speed. See speed diagram on the underside of the belt cover. 2. Retract drill bit frequently during drilling operation to clear chips from hole. 3. Replace or sharpen drill bit.
Excessive drill bit runout or wobble	1. Bent drill bit. 2. Drill bit not properly installed in chuck.	1. Replace with a straight or new drill bit. 2. Install drill bit properly. See installing and removing drill bit in “OPERATIONS AND ADJUSTMENTS”.
Spindle returns too slow or too fast	1. Return spring has incorrect tension.	1. Adjust spring tension. See adjusting spindle return spring in “OPERATIONS AND ADJUSTMENTS”.
Chuck will not stay onto spindle	1. Grease, dirt or oil on spindle taper or in chuck taper.	1. Clean grease, dirt or oil off of spindle taper and chuck taper. See drill press head and motor assembly in “ASSEMBLY INSTRUCTIONS”.

PARTS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KEY NO.	PART NO.	DESCRIPTION	QTY.
1	OR71500	UPPER PULLEY COVER ASSY, INCL REF 2,3,4,5,6,7	1
2	OR93452	SPEED CHART	1
3	OR93541	M3.5x9.5mm PAN HD TAP SCREW	4
4	OR71501	NAMEPLATE	2
5	OR93542	M4.2x9.5mm PAN HD TAP SCREW	1
6	OR92383	BOTTOM PULLEY COVER	1
7	OR91774	M4x10mm CHEESE HD SCREW	4
8	OR90241	M6x12mm CHEESE HD SCREW WITH FLAT WASHER	6
9	OR90431	M4.3mm EXT TOOTH WASHER	4
10	OR90078	M4mm HEX NUT	4
11	OR92384	SLEEVE	1
12	OR92306	RETAINING RING	1
13	OR90366	BALL BEARING<6204>	1
14	OR92307	SPACER	1
15	OR90366	BALL BEARING<6204>	1
16	OR92384	SLEEVE	1
17	OR92398	HANDLE, INCL REF 18	3
18	OR92331	KNOB	3
19	OR92402	HANDLE SUPPORT	1
20	OR93554	M5x45mm SPRING PIN	1
21	OR71502	SHAFT PINION	1
22	OR90228	M10mm HEX NUT	1
23	OR90647	3/8" LOCK WASHER	1
24	OR92335	SPECIAL SCREW	1
25	OR71503	LOCK HANDLE	1
26	OR91499	8.4mm FLAT WASHER	1
27	OR94171	M6x80mm HEX SOC HD SCR	1
28	OR71504	INSULATOR	1
29	OR90343	PUSH BUTTON SWITCH	1
30	OR71505	SWITCH SUPPORT PLATE	2
31	OR90761	M5x10mm PAN HD SCREW	2
32	OR90053	M5.3mm EXT TOOTH WASHER	2
33	OR71506	SPECIAL SCREW	2
34	OR90761	M5x10mm PAN HD SCREW	2
35	OR71507	SWITCH COVER ASSY	1
36	OR91040	SWITCH PADDLE	1
37	OR90696	#6-32 x 1/4" ROUND HD SCR	2
38	OR90235	M6 HEX NUT	1
39	OR92344	NUT	1
40	OR92345	RING	1
41	OR92346	M17.5mm FLAT WASHER	1
42	OR90218	BALL BEARING<6203>	1
43	OR71508	RUBBER WASHER	1
44	OR71509	QUILL	1
45	OR92349	SHIFTER	1
46	OR93533	M6x46mm HEX HD SCREW	1
47	SC80435	M6x12mm HEX SOC SET SCREW	1
48	OR71510	STOP COLLAR	1
49	OR93544	BALL BEARING<6205>	1
50	OR71511	SPINDLE	1
51	OR71512	ARBOR	1
52	OR71513	CHUCK, INCL REF 53	1
53	OR71514	KEY	1
54	OR93550	M12mm LOCK NUT	1
55	OR90235	M6mm HEX NUT	1
56	OR93531	M6x12mm FLAT HD SCREW	2
57	OR92356	MOUNTING BRACKET	1
58	OR92353	STOP NUT ASSY, INCL REF 59, 60	1
59	OR92354	SPRING	1
60	OR92355	QUICK RELEASE NUT	1
61	OR71515	DEPTH ROD, INCL REF 62	1
62	OR92409	DEPTH SCALE	1
63	OR92727	1/2"-20mm HEX NUT	2
64	OR71516	SPRING CAP	1
65	OR71517	COIL SPRING	1
66	OR71518	SPRING RETAINER	1
67	OR91471	M8x70mm HEX HD SCR	1
68	OR71519	CLAMP NUT	1
70	OR71520	HEADSTOCK, INCL REF 71,72,73,74	1
71	OR92728	5mm DRIVE SCREW	4
72	OR70312	SERIAL NUMBER LABEL	1
73	OR71521	WARNING LABEL	1
74	OR92728	5mm DRIVE SCREW	4
75	OR71522	GROMMET	2
76	OR93524	M10x12mm HEX SOC SET SCREW	2
77	OR93548	M6x24mm SPRING PIN	2
78	OR93523	EXT RET RING	1
79	OR71523	V-BELT TENSION HANDLE	1
80	OR92326	LOCK SCREW	2
81	OR92327	FOAM WASHER	6
82	OR92329	PIN	1
83	OR92328	ECCENTRIC	1
84	OR90310	M8x16mm HEX HD SCREW	1
85	OR92324	CLAMP	1
86	OR90382	M5x16mm CHEESE HD SCREW	1
87	OR92392	MOTOR TENSION ROD-L.H	1
88	OR92391	MOTOR TENSION ROD-R.H	1
89	OR92317	MOTOR BRACKET	1
90	OR93539	1/2" LOCK WASHER	2
91	OR90280	M12mm HEX NUT	2
92	OR92389	SPINDLE PULLEY	1
93	OR92315	SPINDLE PULLEY NUT	1
94	OR92385	BELT<J28.5>	2
95	OR90075	BALL BEARING<6202>	2
96	OR92386	CENTER PULLEY	1
97	OR92387	SHAFT	1
98	OR90222	M6x10mm HEX SOC SET SCREW	1
99	OR92312	KEY	1
100	OR92388	MOTOR PULLEY	1
101	OR70365	MOTOR, INCL REF 102,103,104	1
102	OR93502	WIRE DIAGRAM 120/240V	1
103	OR70418	MOTOR SPEC LABEL	1
104	OR92393	MOTOR CORD	1
105	OR90308	M8x20mm HEX HD SCREW	4
106	OR91499	M8.4mm FLAT WASHER	8
107	OR90307	M8mm HEX NUT	4
108	OR92394	POWER CORD	1
109	OR92322	WIRE TIE	2
115	OR92371	TABLE	1
116	OR92369	HANDLE ASSY	1
117	OR90222	M6x10mm HEX SOC SET SCREW	1
118	OR92364	PINION GEAR	1
119	OR92413	SHAFT	1
120	OR92416	WORM GEAR	1
121	OR92411	RING	1
122	OR93552	M6x8mm HEX SOC SET SCREW	1
123	OR71527	TABLE SUPPORT ASSY, INCL 124, 125, 126,127,128,129, 130	1
124	OR71528	BRACKET	1
125	OR93558	5/8-11x1-1/2" HEX HD SCREW	1
126	OR92367	SCALE	1
127	OR92728	5mm DRIVE SCREW	2
128	OR92366	INDICATOR	1
129	OR92728	5mm DRIVE SCREW	2
130	OR92414	LOCK PIN W/CABLE	1
131	OR92370	LOCK HANDLE ASSY-TABLE	1
132	OR92368	LOCK HANDLE ASSY-COLUMN	1
140	OR71525	COLUMN	1
141	OR71526	COLUMN SUPPORT	1
142	OR93524	M10x12mm HEX SOC SET SCREW	1
143	OR92373	RACK	1
144	OR93546	M10x40mm HEX HD SCREW	4
145	OR90307	M8mm HEX NUT	2
146	OR90248	M8.1mm LOCK WASHER	2
147	OR91499	M8.4mm FLAT WASHER	4
148	OR92725	M8x125mm HEX HD SCREW	2
149	OR71524	BASE	1
150	OR90290	3mm HEX WRENCH	1
151	OR93547	5mm HEX WRENCH	1
160	OR92375	LIGHT ASSY, INCL REF 161,162,163, 164, 165, 166	1
161	OR91317	LIGHT WARNING LABEL	1
162	OR92487	CORD SLEEVE	1
163	OR92376	CORD CLAMP	1
164	OR90502	M6mm LOCK WASHER	2
165	OR91758	M6x16mm HEX SOC HD SCREW	2
166	OR92377	LIGHT CORD CLAMP	2
167	OR71528	OWNERS MANUAL	1
168	OR71529	OWNERS MANUAL SPANISH	1
169	OR71530	OWNERS MANUAL FRENCH	1

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